The Best Radio Transmitter for FPV Drones

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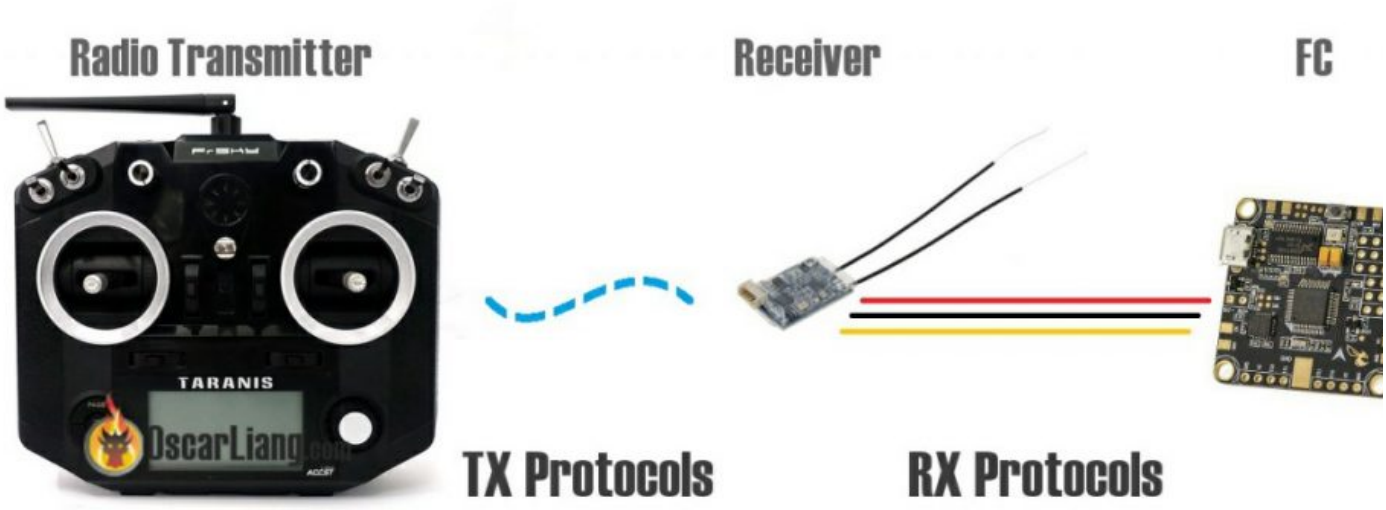
This buyer's guide explains the basics of radio transmitter for FPV drone. Apart from price, the suppor
frequency and protocols and the number of channels, there are a lot more to consider when buying a

the radio receiver (RX) which is connected to a flight controller.



t items to buy when getting into FPV, as you can use i
ne. Unlike many other components and accessories th
radio will follow you for many years, so it's okay to inv

her guide to FPV drones.

1. Radio Transmitter Round-up
2. Radio Recommendations
3. Radio Transmitter Frequency
4. Gimbal Sticks
5. Mode
6. Switches
7. Channels
8. RF Systems
9. Radio Receivers

12. Operating System
13. Telemetry Support
14. FPV Simulator Support
15. Ergonomics

Radio Transmitter Round-up

Here is a list of all the popular radio transmitters on the market currently.

	Product Names	Protocol	Price	Resellers
		ayang	$40	BetaFPV | GetFPV | R
			$46	Banggood
			$56	Banggood | Amazon
	Spektrum DXe	Spektrum	$60	Amazon
	Jumper T-Lite	Multi + External	$76	RDQ | Banggood

	Frsky X9 Lite	Frsky + External	$90	Banggood | GetFPV | Amazon
	Radiomaster Zorro	ELRS/Multi + External	$80-100	GetFPV | RDQ | Amaz
	Jumper T-Pro	ELRS/Multi +	$100	Banggood | RDQ | Am
		External	$120	Banggood | Amazon | HorusRC
		External	$130	Banggood | RDQ | Am
		External	$300	Banggood | RDQ | Buc
	Jumper T16 Pro	Multi + External	$160	Amazon

	Flysky Nirvana	Flysky + External	$180	Amazon | Banggood
	Frsky X-Lite	Frsky + External	$140	GetFPV | Banggood | Amazon
	Frsky X-Lite Pro	Frsky + External	$200	RDQ | Amazon | GetF
		m	$230	RMRC | Amazon | Get
		External	$250	Banggood | Amazon | HorusRC
		e	$160 – $200	GetFPV | RMRC | Ama
	TBS Tango	Crossfire	$250	Amazon | GetFPV

	Frsky Tandem X20	Frsky + External	$330	Banggood
	Frsky Horus X10S	Frsky + External	$470	HorusRC | Amazon
	FrSky Horus X12S	Frsky + External	$500	Amazon | GetFPV | HorusRC
		m	$480	Amazon

mmendations below. However, I encourage you to do
u like before deciding.

tor

-h1f3

64

- Amazon: https://amzn.to/34WqWIW
- **Radiomaster:** https://oscarliang.com/product-gojr

The Zorro is almost a perfect radio for some people: it has a very compact form factor, is affordable, ru EdgeTX (probably the most advanced radio firmware currently), has built-in ELRS/multiprotocol modul well as supports external module. Also the ergonomics is excellent for “thumbers”. It has more than en switches for most people, and the large bright screen is easy to see under sunlight. It supports FPV si so you can get this to practice flying before even building/buying an FPV drone.

radio using a 2S battery, as well as charging the battery from a USB power bank while flying.

I strongly recommend checking my review of the Zorro before buying. It comes in several different vers that differ in the internal RF module.

Best Value and Versatility

Product Page: Banggood | RDQ | Amazon

In my opinion, the most versatile and best value radio right now has to be the TX16S. It has a multi-pro module inside that supports almost every protocol in the hobby, and it also fully compatible with Crossf full size hall sensor gimbals gives you full range of stick travel and excellent precision. All these, and m only $130. See my review of the TX16S. I'd recommend getting the Crossfire module with this radio.

mics. According to TBS, the Tango 2 has high quality
rsion), which is great for transportation. It has built-in 9
of 250mW. It runs OpenTX, has built-in USB charging
it's made by TBS – the brand you can trust when it comes to quality.

> *Note: my friend Giovanni who owns the Tango 2 disagrees with the product description which claim have full size gimbals. He said they are way smaller than the full size gimbals on a Taranis X9D.*

Originally it only supports Crossfire (915MHz), but recently TBS added hardware and software support external "lite" module, meaning a multiprotocol module can be added to the internal crossfire n e s

However it's not great for wing and plane flyers, it doesn't have enough switches/slider, and there is no buttons. See my full review of the Tango 2 and how it compares to the Frsky X-Lite Pro.

The TBS Tango 2 is definitely my pick if all you want is to have the most compact radio and only flying multirotors.

Now, let's get down to the technical stuff and learn about radio transmitters.

Radio Transmitter Frequency

The common frequencies used in FPV drones are 2.4GHz and 900Mhz.

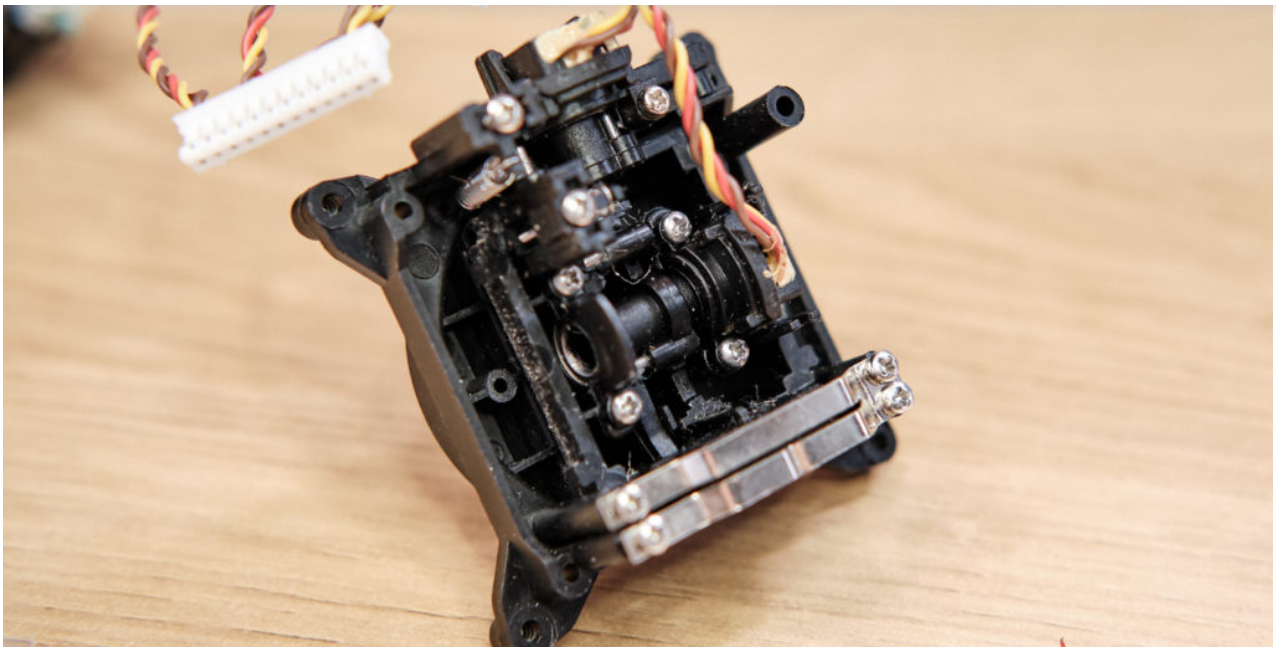
2.4GHz is the standard nowadays for radio control thanks to its frequency hopping technology, which manages channel automatically to avoid interference between pilots.

ed in long range flying. Those who don't fly long range better signal penetration and reliability. The exact oper ses 868MHz, while non-EU countries use 915Mhz.

in RC, such as 27MHz, 72MHz, 433MHz and 1.3GHz. specific applications, you will learn about these as yo nd 900Mhz.

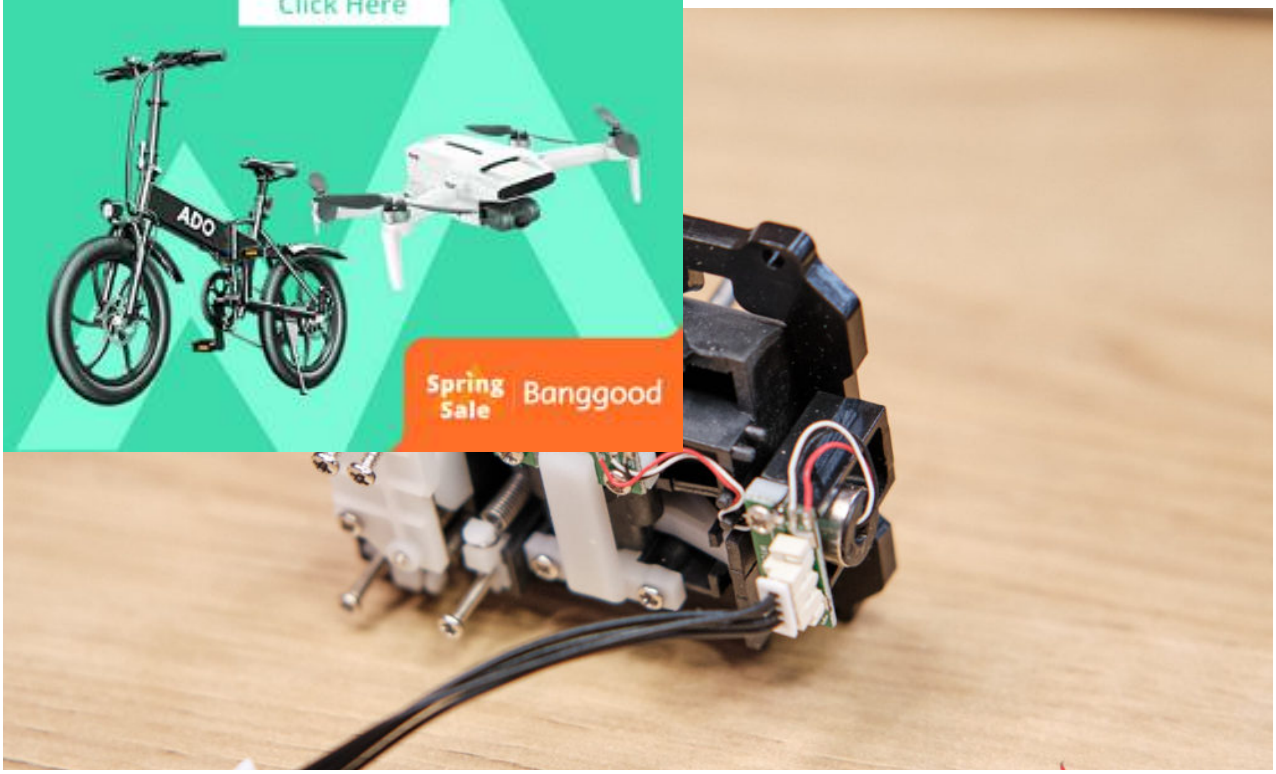
", they translate user inputs into digital data and contro drone's movement.

Potentiometer based gimbals are normally cheaper and deteriorate faster over time due to friction betv contacts. On the other hand, hall sensor gimbals uses magnets to determine stick position and thus sh last longer.



Gimbal

als also offer better accuracy and resolu

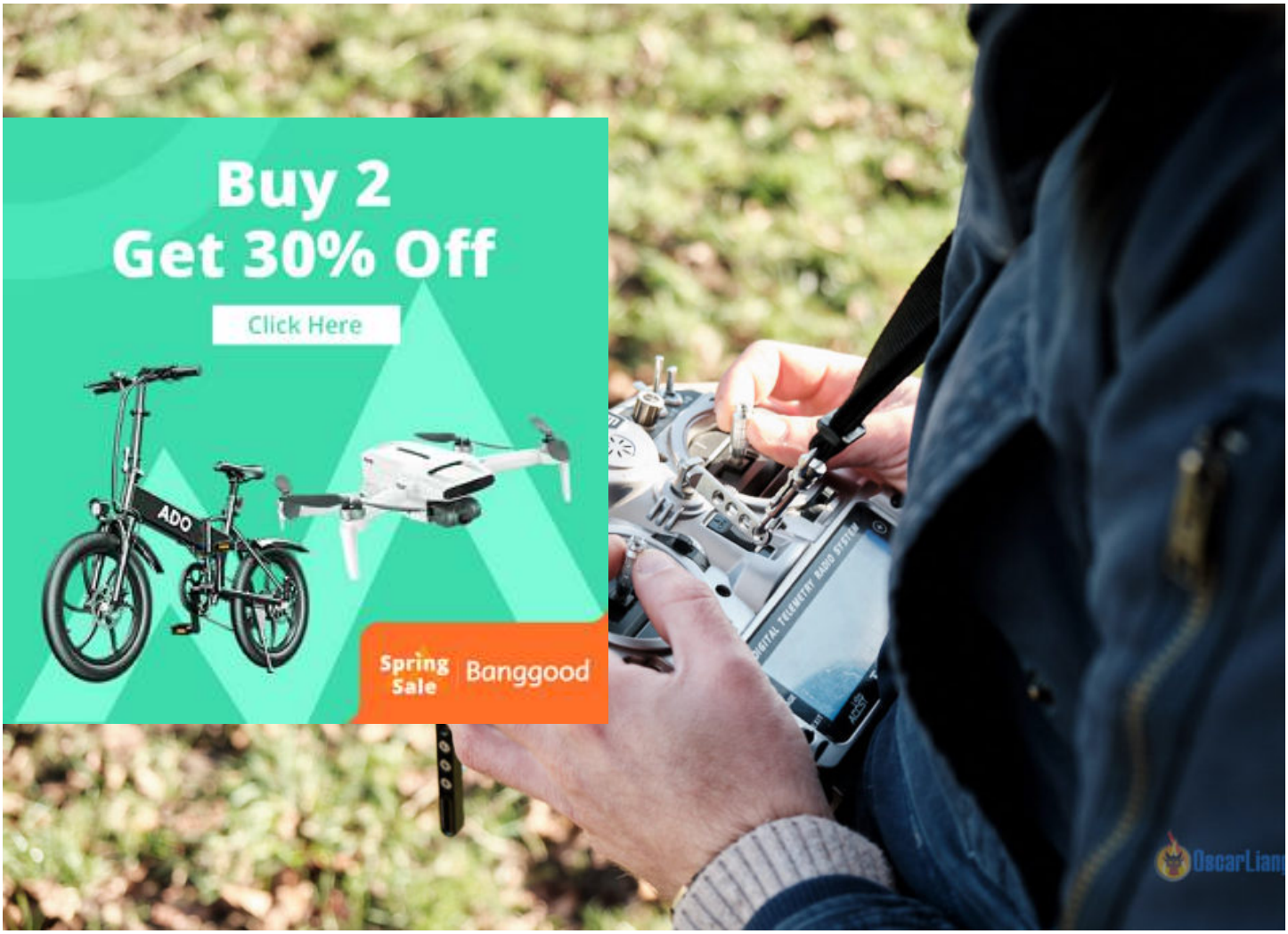


Hall Gimbal

Regardless the type of gimbals, you can normally adjust the spring tension to achieve certain stick fee mostly a personal preference, and it could help tremendously with your control precision. In my review usually attach a diagram where you can do this inside the radio. Here is a guide on adjusting stick tens the Taranis and other popular radios.

How to Hold Gimbals?

Another thing to consider is how you should hold the gimbal sticks. I have another post explaining the ways and benefits.



"Thumbers" typically want shorter sticks and a thinner radio body, similar to how they would hold a gar controller. "Pinchers" might prefer longer sticks and travel, and a neck strap might also help sta e th

There is no right or wrong way, it's purely personal preference.

Stick Ends

The tip of a gimbal stick is called “stick end”, and it can be replaced. “Pinchers” might prefer a different stick end to “thumbers”.

Gimbal sticks are normally either M3 or M4 threads, so make sure you check before purchasing replacements.

Here is an example of the different types of stick ends:

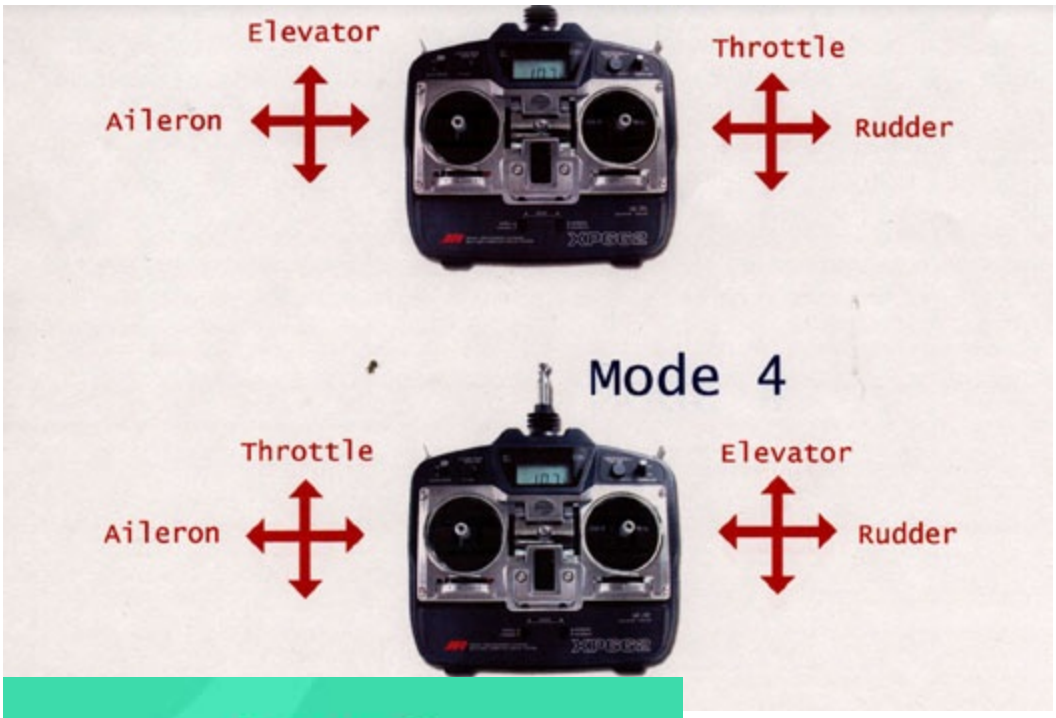
- Jumper T16 – M3
- Jumper T18 – M3
- Radiomaster TX16s – M4
- Jumper T12 Pro – M3

Mode

Before getting your first radio, decide which mode you prefer. The mode determines the configuration

n the left joystick and the throttle on the right one.

e pilots because the stick represents the movement of
ht joystick and the motor throttle on the left one. The ri
e left joystick only self centres in yaw axis (left/right dir
to allow constant throttle.



Rudder are swapped.

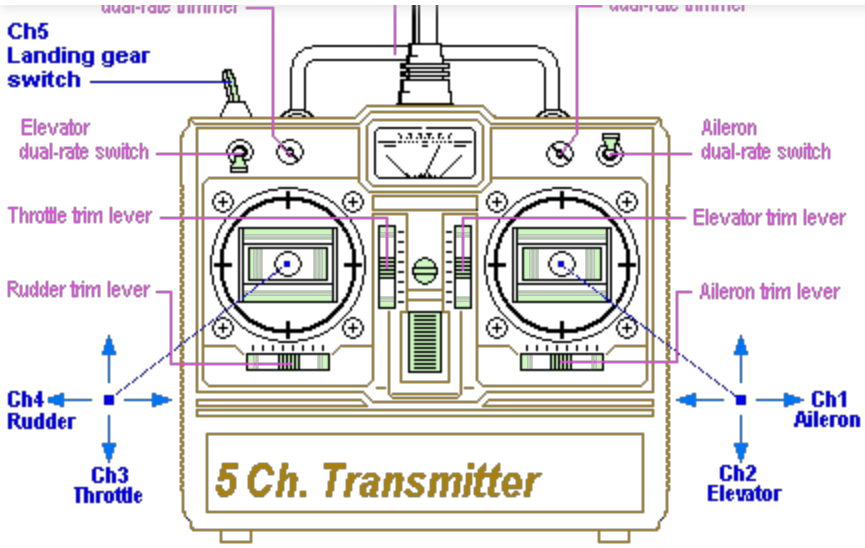
Rudder are swapped.

reference. If you are not sure which mode to use, just
s use. You can change to other modes in some radios

can use for arming and changing flight modes etc.

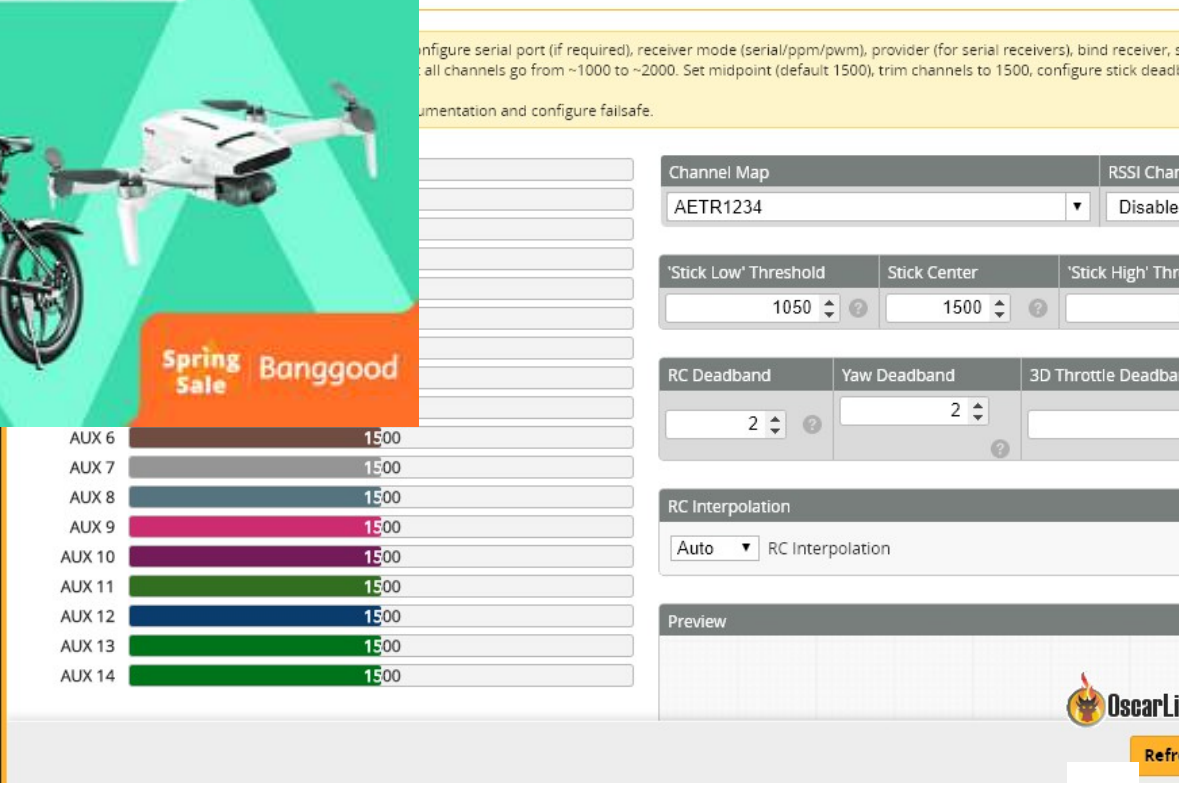
forms as well as sliders and rotary knobs. However as
RC plane flyers do.

st FPV drone pilots. Of course it doesn't hurt to have r



Channels

es a channel to send the data to the receiver. Channel



The extra channels are called “AUX channels” (Auxiliary), they can be assigned to the switches on you for arming the drone and activating other features.

You don’t need to use a lot of channels to fly an FPV drone. Personally I only use 6 to 8 channels norm arm switch, 2 – buzzer switch, 3 – flight mode switch, 4 – flip over after crash.

The number of channels is also limited by the receiver protocol. For example, Frsky D16 (SBUS) can s up to 16 channels, while Frsky D8 (PPM) can only support up to 8.

RF Systems

The common RF systems we use in FPV drones are:

MHz)

common.

t to use as part of the consideration when choosing a n external module that can be installed on radios with e a radio, having an external module bay is a big plus so if you know it’s the only or main RF system you will using, it saves you money purchasing that external module separately.

Right now (March 2022), I am putting ExpressLRS on all my drones, and that’s what I would recomme you are buying a new radio today. It’s simply the cheapest yet best in performance RF system out ther now.

TBS Crossfire and Tracers are also popular systems which have been around for sometime. They are designed, very reliable and user friendly but more expensive compared to the open source Ex LR

Radio Receivers

A radio receiver (a.k.a. RX) is the device that receives user commands from the radio transmitter, and that data to the flight controller.

transmitters from the same brand, using the same pr
veen the transmitter and receiver, every brand has thei
ocols and RX protocols.

" that is designed to be compatible with receivers from different manufacturers. And there are 3rd party receivers made to work with Frsky transmitters. Check product pages, they should tell you what protocols are supported.

When you buy a radio transmitter, you need to realize that you are also locking yourself into their recei (eco system). This becomes an important consideration: some brands of receivers are more expensive others; some brands might have a better selection of light weight receivers for micro drones; Some bra don't have certain features such as telemetry…. etc…

Here is a size comparison between some of the popular receivers from different brands.

Binding TX and RX

To establish communication between a radio transmitter and a receiver, you must bind them first.

Binding of TX and RX only needs to be done once (it might need to re-bind after firmware updates).

The binding process is usually straightforward (matter of pressing a button on the receiver), but the ste might differ on specific brand. It's best to refer to the user manual for instructions.

Note that you can bind multiple receivers to the same TX (in theory, you can control multiple drones us same transmitter at the same time), but you can only bind the RX to one TX.

How to choose receivers

Things to consider: size, weight, RX protocols, telemetry. Here are the popular RX Round-ups:

- ExpressLRS receivers
- Frsky receivers
- Flysky receivers
- Crossfire receivers

x wire where the active element is wrapped in shielding

called “diversity” which improves signal reliability. To ac vo antennas mounted at 90-degree apart.

fix it following this guide.

e of your RC link.

range

- Line of sight gives you the best possible signal, obstacles between your TX and RX can significar reduce range
- Higher transmitter output power usually results in longer range, but beware of local regulations
- Receiver sensitivity, the more sensitive the better the range
- Receiver diversity, some “full range” RX offers two antennas for diversity
- Antenna placement

options are the TBS Crossfire and Frsky R9M.

External Module Support

A lot of radios these days have a module bay on the back, which allows you to insert an external trans module in order to bind to receivers from a different brand or frequency.

which is basically the user interface.

ome the industry standard in recent years. Many popul

nely powerful and highly configurable radio system. It a

. Learning curve might be a little steep for beginners, b

any years to come.

ransmitters, including PID, rates and other Betaflight s

nTX.

Telemetry is a feature that allows the receiver to send crucial flight information back to the radio transm such as RSSI (signal strength), battery voltage, current draw etc.

In OpenTX, you can display telemetry data on your radio screen, or have the value read out as audio warnings.

FPV Simulator Support

Training in FPV simulators will help you build up muscle memory and practice without damaging exper components.

Ergonomics

Ergonomics is very much a personal preference, considerations including radio weight, the location of sticks and switches, housing material, radio form factor, all play a part in this.

In my opinion, it's not the biggest factor to worry about, as all of the companies we recommend on this have been around in the RC industry long enough to know how to make a good radio transmitter.

The best thing to do is probably going to a local meetup and try a few different radios from other pilots decide for yourself.

ns

info

ches, OS, and Range

ommendations

with Jumper T-Lite

BEGINNERS HOW TO TRANSMITTER TX

previous post

How to Update Zorro Internal ELRS Module Firmware

r

Review: HGLRC Sector X5 BNF FPV D

Your Comment

Name*

Email*

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By using this form, you agree witl storage and handling of your data

website. Note that all comments are held for moderation before appearing.

SUBMIT

104 COMMENTS

zorro is better than the elrs because even though i lov dealbreaker for me. I'd rather get the module seperat

12th August 2021 - 12:16 pm

Does anyone else think there's a gap in the market here with all those vr type headsets out that either have a (Android) screen built in or allow you to mount your lovely hd ish 6″ phon screen in them?

Cheap receiver attached (ROTGUT2 in my case) and, in most cases, an improved FOV.

An option to display just the headset FOV but receive the full 150′ and pan around it with h tracking (again already there on a phone) and flatten the image would be great as ntly

Would also love the option of big button on side that switches to phone camera view (hole r
required!) in an instant to help landing without having to rip the thing off your head.
Presume there are better receivers out there to take advantage of your phones decent res.
Thoughts are welcome, especially if anyone knows of any projects currently exploring this a
sure sure some clever bugger out there can code this!
For the above wish list, I'd happily pay a small fee ;)

BOBALL

12th August 2021 - 12:59 pm

Soz, wrong place, meant to be in the goggles section, obvs!

sky with their transition from accst protocol to access p
ng frsky altogether. I'd like to have the soplest transmi
over the place and I can't get it to bind. I emailed then
col and then you have to register the receiver to the ra
the answer? I think TBS is my answer.

n steering away from Frsky radios due to their recent
of protocol in new radios and RX.
You can find out how to bind ACCESS receivers here.

STEPHANO MGOTE

2nd February 2021 - 5:16 pm

STEVE DENTON

3rd January 2021 - 4:48 am

Hello Oscar, first off, thank you! I've been watching, reading, and learning from you for a LO time now, I mean YEARS. What you do for the rc community is admiral and well appreciate is why I'm asking your opinion on this as I truly trust your opinion and judgment (very few p that club). I've been flying for over 35 years and been into quads since the early beginning. with a Spektrum DX18 which I love and have used since it's release but… it's getting harde harder to get things like telemetry and other features to work properly with the ever growing quads that are coming out. So… what is the best radio (below $1000 bucks) do you recom me purchasing and then learning (protocol) so I don't get left behind with my DSMX Spektr controller style) and I'm a thumber. Love Hall effect, a ly made materials tx. You know, like the older Futaba 1 nber those. Thanks again and I'll be awaiting your resp

diomaster TX16S. The built-in multi-protocol module a ktrum stuff, and a lot more like the popular Frsky recei ows you to use Crossfire which is my daily driver. You rn feature on this radio. The best part is it's only $160 gimbals.

Here's my review: Review: Radiomaster TX16S Transmitter

JANUS VAN ZYL

3rd December 2020 - 9:05 pm

Hello Ozzie,

writing this blog, I am no longer what you would call a rookie, or intermediate, I fly expert le
did post on here but can not find it now, so I don't know if you ever answered me. But I wou
REEEEEAAALY like to know your opinion on the Jeti Duplex DS14 Transmitters and basica
overall product as I am told it is just about the top of the line? But is it good for FPV?

PAUL G

11th August 2021 - 3:27 pm

I would like to konw that as well, I'm thinking about buying a DS16 for my Heli's bu
would also like to fly my drones with it as well

JON SCOTT

parisons . isn't the Spektrum race module smaller now
one else? The wires come out parallel now. see DSM

o? This looks to be an excellent gimbal radio, opentx,
ze as Flysky i6. Cheaper even than the Radiomaster T
naller form factor than T16 etc, but for some, that is a p
a minus. If I were looking for a new Tx right now, it would be high on my list.

SCOTT BAKER

14th June 2020 - 9:05 pm

X-Lite Pro is a receiver compatibility nightmare; probably even worse for me since I'm a be
But most reviewers on YouTube seem to have the same complaints.

HASAN SABRI

11th December 2019 - 3:59 am

Hi Oscar,

just a quick recommendation for updating the list of popular radios,

the T6 is outdated and should be swapped for the i6/i6s/i6x.

the 9xr is discontinued, and maybe should be swapped for the 9x, as it now supports afhds

thanks.

AJMOTO

18th January 2019 - 12:42 pm

t Taranis X9E? Is it not good?

FS-i6X 2.4GHz 10CH AFHDS 2A RC Transmitter will b

Thanks

en it's a good combo :)

ANDY GOH

20th January 2019 - 3:17 pm

Flysky FS-i6x is an incredible value for money for beginners. It's slim, light weight, supports 10 channels and uses only 4 AA batteries… For first timer, this is one of t transmitter out there at around USD50 ?

12th October 2018 - 2:47 pm

Hi,

What minimum voltage shall I set up on my taranis X9D plus, standard batteries Ni-MH AA
mAh 7.5V ?

I don't want to drain and damage the bats cells. I know the rule for LiPo is about 3.5 volt pe
What about Ni-MH AA2000 mAh 7.5V?

OSCAR

23rd October 2018 - 4:33 pm

6V or even safer at 6.5V :)

ade my Fs-i6x to get a longer range? (not too experier
n I get that can reach a range of 1km or above.

d I've tested it can go 1Km+ with XSR or X4R-SB rece

AMIR

6th July 2017 - 3:48 pm

Im looking for a Cheap TX which has lots of Cheap and Tiny RX options for miniquads, Fly
– i6 okay?

10th July 2017 - 5:58 pm

Yes both Flysky and Frsky have many RX options for mini quads.

ARABINDA

10th May 2017 - 3:06 pm

I dont know about electronics much. But i am making a small plane by using 2 12v dc moto
want to control that plane by transmitter. So now what i hav to for. Please help me.

TOM

26th March 2017 - 4:10 am

Hi, I came accross your site as I was googling for building drones. I am gettign into buildin
max range of these transmitters in miles? Is there a w
ware would I need?
e it follow something automatically when making movie
ery is low? how are those programmed?

Hello.
Nice work! It was very helpful for me, when I decide to buy my quadcopter. I want to buy wi
flight controller. banggood.com/Realacc-X210-4mm-Frame-w-F3-6-DOF-Racerstar-BR2205-2600KV-Motor-RS30A-V2-Blheli_S-5X4X3-Prop-p-1078119.html
But Taranis is much expensive for me. Can I use Radiolink AT9 for example? What do you
about that transmitter?

8th February 2017 - 10:12 pm

It's good go for it

CARLOS ATOUGUIA

31st October 2016 - 10:12 am

Hello,

i am looking for someone or a company that will be able to customise my transmitter. i wan
the throttle on a trigger button and not on the stick.

does any one know of any company anyone that is able to do that?

ZEESHAN

your article was a blessing for me. i have built a basic
round….i made an adnroid app for this……moving ah
g arduino with gryo+accelermeter……very frustrated
se receiver etc and build from core.
nake a perfect one and the cost on it was increasing d
r and transmitter….
:
accelerometer or we use external ones?

3. do we need a flight controller as well?

sorry for such basic questions….but these basic things are needed by my small brain

WEEBLY REDDIT

4th April 2017 - 5:24 am

Your drone's flight controller should have a gyro/accelerometer built in.

You need a flight controller/

AMIR

6th July 2017 - 3:44 pm

In theory you dont need a FlightController, you can just hook up Servo cor of the ESCs to a PWM Receiver and viola, you control motors, but you do any sort of stabilization

SIAMAK

6th September 2018 - 11:15 am

I would say that Oscars pages are among the most complete and comprehensive drones in general) I have seen. I recommend you have ges from beginning in order to acquire more understan nd at the same time get your questions answered. It w eded) but believe me it's worth it.

will this work on the Eachine 250 racer I am well used

JONATHAN

17th June 2016 - 10:08 pm

Hi Oscar

Note that in the UK, and many other countries outside the US, 72MHz is illegal. The equiva here, for aircraft only, is 35MHz.

OSCAR

19th June 2016 - 10:47 pm

good point guess i missed to mention that i will add a few words in the tutorial shor thank you Jonathan!

JUSTIN

17th June 2016 - 11:31 am

Hey oscar i have a turnigy 9x with er9x. i was wondering if you ever setup throttle curves to sensitivity when the sticks are a mid point? maybe you could write an article regarding mixe

s on the TX, so I can have full resolution throughout th asking is just rate which you can change in FC isnt it?

OSCAR

19th June 2016 - 10:28 pm

lol sorry not much experience with Deviation TX, neither from my editor Justin and flying mini quad around me…

22nd June 2016 - 12:05 am

Deviation is a replacement firmware designed primarily for the Walkera De series RC Transmitters. While Deviation is heavily influenced both by the ' DEVO8 firmware as well as by the Flysky/Turnigy based ER9X firmware, i been written completely from scratch to be easily portable and extensible. The supported transmitters are the DEVO 6/6S/7E/8/8S/10/12/12S/F7/F1 The Devo 7e is one of the most highly recommended entry level TXs out t The Deviation firmware is actively maintained and developed, a new majo version, 5.0.0, was just released. There's also an awesome user base and support community at deviationtx.com to help out with any mods or issues

a flying Quadcopter hand Controller Wiring diagram..

emote and manual can i use any 4CH 2.4G remote co

ROBIN

14th June 2016 - 7:56 pm

Have a look into a Walkera Devo transmitter and flashing DeviationTX to it
It's an open source firmware and has been 100% solid for me and allows me to fly models
(from toy quads to 250 fpv quad …and a fleet of helis… from toys to 450 s an

ABHINAV

14th November 2015 - 7:07 am

Hi Oscar,

I have a 4ch transmitter of 2.4GHz freq and i want to connect it my laptop for which dsc por be present in the transmitter but there is no dsc port. What can be done? plz help.

Regards.

FATEMEH HASHEMI

22nd October 2015 - 12:33 pm

Hi, Is there any way to control the Quadcopter with mobile phone?

ere, of which most are pretty useless when it comes to

to the high end computer TX with big color screens e.t

uple of AUX switches for stuff like flight mode, GPS m

for adjustment of maybe PID's, if your FC supports thi

ded with features that you wont ever use.

Stick with a nice mid range 6 to 8 channel TX and as long as its capable of channel assignr and channel reversing, that's all you are ever going to need.

LUISEN

20th September 2015 - 7:51 am

Hi Oscar

especially FPV seems like something i could enjoy very much.
i bought and played around with the FPV freerider game to get a feel of quadcopter control am loving it. but i am concerned about one thing:
on a real R/C receiver device, can i have the PITCH/ROLL on the LEFT stick and the THROTTLE/YAW on the RIGHT stick? this is the only configuration i personally can fly prop with the FPV view and it feels completely natural to me. but now i see this completely differ both the 2 modes used in real life quadcopter flying.
so i guess my question, can you easily switch YAW and ROLL on a MODE 2 receiver? or d to look out for a special one to buy?
thanks!

ore used to MODE 1 TX (Transmitter)?
h MODE 1 and 2, so that's not a problem.
ver).

r with your quad, you have to manually connect the re the flight controller. You can simply plug them in whatever order or configuration yo If you want the throttle on the right, you will swap the gimbals out on the transmitte mode 1, then plug the channels into the flight controller to suit your needs! good lu Kenneth

DARRELL

3rd October 2016 - 10:01 pm

AEROMODELLING

9th September 2015 - 11:31 am

Very glad to read your blog.Thank you for sharing this article.It is great! I will keep your arti
my idea. Very happy reading.
rcbazaar.com

MIKE

25th August 2015 - 7:58 pm

Hi Oskar!

I have spent a lot of time reading your blog and it gave me a lot of tips. Thanks!

mitters work.

aning, a 2.4GHz RC transmitter can work with any 2.4

e frequency should I check to be sure that they will wo

about the binding proccess between the transmitter a

How is it done? etc.

Hi Mike

1. no… transmitter (TX) usually only work with RX of the same brand… or they sh
specify which one they are compatible in the product page. Quick google of the TX
also give you some options of what RX can go with it.
2. binding process might be slightly different from TX to TX… i suggest consulting
manual.

1st August 2015 - 5:05 pm

hello

can i control a quadcopter for laptop without any other transmitter…

what program requaired to controle it

OSCAR

6th August 2015 - 12:28 am

It's best to have a transmitter for safety as it's easier to control.

FIKRI

30th June 2015 - 3:59 pm

uads be programmed in a way that only 1 side has thro

uld cause the quad to flip i suppose?

ram the controller to like trigger a switch when we wa

doing a waterproof quad. So initially it flies in the air n

float on water. After that, i was thinking of maybe trigg

me its just gonna flip and nothing else. After it flips, i w

ration. Is that possible?

Very interesting info !Perfect just what I was looking for! Being rich is having money being v is having time. by Margaret Bonnano.

DARIO

31st May 2015 - 9:25 am

Im referring to the last part in your article about the Transmitter and its hacking.
For a University project i plan to hack a transmitter and control my quadro with Data I gene
Arduino or Processing. have you come along with a transmitter that can be adjusted to to tl
Although Im not super experienced, i imagine the flow of communication like this: my input
transmitter -> rc reciver -> flight controller -> AC -> Motor.
Can you help me some how?
Best regards

RICK

17th May 2015 - 12:14 pm

i have a hobbyking 6ch transmitter….it works complicated. does annyone know how you se

motors and propellers 8×4.. what frame should i use??
table for my quadcopter.. and battery 1800mah 20c 1
ood for my quadcopter?? openpilot,and transmitter flys
anywhere.. and yes frame please

1st May 2015 - 10:29 am

hi!!
quadcopter need 4ch mode 2..no matter what brand.. am i right?

OSCAR

1st May 2015 - 4:08 pm

CHRISTOPHER BOYD

20th April 2015 - 12:05 pm

Hello Oscar

I am reading through all your blog/posts that are so informative. Thank you for taking the ti
share you hard won knowledge and skills.

I have been dabbling in Quads for a few years and decided that I would be in it for the long
so……I bought a taranis X9D (Nov 2013). It is a very nice piece of equipment but very com
for a novice user. I am now spending many hours to learn many basic things so I can actua
it for the first time. It has the potential to run in four “modes/configs” that allow you to use ei
8,12, 16 or 32 channels. It is enabled for telemetry as well.

serious” copter- a Quanum Nova (aka Cheerson Cx-20
I think that using different “flight modes” (which I can a
be able to use the limited 8 channels for the four motor
era gimbal (2 axis only), one for camera shutter. This e
y data gets back to the Transmitter. Any one help with
t some more on it as I work my way through the maze

e Taranis is an excellent product.

setup taranis telemetry in a week or two hopefully you
wait! :)

CHRISTOPHER BOYD

22nd April 2015 - 10:50 am

Hello Again.

I just got back to your blog through another circuitous route. I was chi

the controller side of my quad on the taranis. I do not understand these adequately yet. Any advice where to find a good tutorial that will give me t fundamentals of what happens when switching flight modes, how switches used for this. I am not clear if I use a witch will it reallocate one of the radi channels to another function allowing me to effectively increase my numb channels (…..but I still only have 8 receiver channels that are hard wired t assets on the aircraft…?)
Your somewhat confused pupil!

OSCAR

22nd April 2015 - 12:57 pm

our FB group, lots of people can offer advice there, lir
ne website.

channel with a 4 channel remote), is there anyway I ca
? I also want to see if I can upgrade the battery life and

I don't think you can upgrade the TX/RX on a RTF quad.

ROBIN

14th June 2016 - 7:51 pm

Yep, certainly the TX benefits from a better one – if you google for Deviationtx if wi

I'm surprised Deviation doesn't get more of a mention on here TBH, electronics tin galore :D

GERRYPW

17th June 2016 - 3:56 pm

I am sure you have moved on to other quads by now but the x5c is a good way to teeth in this field of play. You can mode your TX for longer ranger which you might discovered already. Have fun.

DARISTIZ

14th February 2015 - 10:20 pm

confused about what transmitter and receiver should this and Maybe give me some link? Thanks in advanc

don't have a 9XR so not sure what receivers are com

13th March 2015 - 11:52 am

hobbyking.com/hobbyking/store
/__14349__FrSky_DJT_2_4Ghz_Combo_Pack_for_JR_w_Telemetry_Module_V8
This is the recommended module set up for 9XR.

FIRDAUS

Hi Oscar,

I have Esky Belt CP V2 Heli which is 6Channel transmitter and receiver. Can i use it for Quadcopter? I plan to buy ARF kit Quad.

Thanks!

OSCAR

2nd February 2015 - 9:16 am

Yes I think it should work :)

DANIEL C.

23rd January 2015 - 3:36 pm

f questions to many to ask just now. Text me please at
h I'm sure you can help even more.

nsmitter, but they do have nicer gimbals, maybe better

transmitter? And how many gimbals there are in a trar
nsmitter?

OSCAR

19th January 2015 - 1:09 pm

Hi, are you thinking of camera gimbal? it's not what I meant there. Transmitter gim looks like this

PAKAL

19th January 2015 - 10:10 pm

I was actually thinking of the transmitter gimbals. And just when I hit the “p
button, I realized that those mysterious internal gimbals have actually bee
in front of my eyes the whole time!
Thanks for replying anyhow.
P_

ALU

13th January 2015 - 9:58 pm

we use other (separated) telemetry using 433mGhz r
des, gimbal control or camera ctrl?

n RG831B receiver and I’m building my own drone
ight controller naze 32 but I saw on the net that it does
work with the DMSS modulation, is it true? is there any possibility to solve this problem? if t
no way, I will buy an other flight controller but It’s difficult to find informations about this so c
know any flight controller that i can use with my RC ?
I am sorry for my english I think it is not really correct …
have a nice day,
Matthis

24th December 2014 - 9:39 am

sorry i am not sure, i have never come across the JR PROPO XG8.

SHUSHANT

19th September 2014 - 7:18 pm

Hello sir,

I am a beginner. ….u also can't say me a beginner because I am very keen about quadcop just love them. I am just 14 I saw a video on YouTube on how to make a quadcopter. I am confused about the RC transmitter.

1) on the video it showed that u need a transmitter and reciever with 4ch……I live in india a there I found all other parts but I didn't found the RC controller.pls help me with some indiar

low cost so should I buy it as I am worried tht I won't h d it won't work.

sites that sells RC stuff, but I do know a popular Intern

Check out this page: http://www.hobbyking.com/hobbyking/store /uh_viewitem.asp?idproduct=8992&aff=1195429

Thanks

Oscar

WALID

17th August 2014 - 12:52 pm

ASHADE

9th June 2014 - 8:17 pm

Would you recommend the newer 9xr instead of the 9x or would you directly go for the Tara

Thank you in advance

NITISH

2nd June 2014 - 5:58 am

Hello

I am a beginer.Is FR SKY CT6-B 6ch is fine for a quadcopter.In future I want to upgrade my

how many channels(minimum) required.

gret it!

for switch modes, 1 or 2 for gimbal control, or/and FP

amera & FPV camera)

i just had a basic doubt,I have a transreciever with 3 channels,but your blog seems to sugg

we have a minimum of 4 channels. Can I not send the data on same channel by multiplexir

reduces the number of channel usage.Please enlighten me on this matter.

OSCAR

24th April 2014 - 9:46 am

JARAN

2nd April 2014 - 3:51 am

Hi,

I've been away from RC for some years and thinking about getting back to flying.

Can my many years old JR X3810 transmitter fly quadrotor? I've already upgraded my radi

2.4Ghz module (it's frsky mudule). Which mode do I have to choose in the radio, heli or pla

Thank you so much.

OSCAR

2nd April 2014 - 8:31 am

as more than 4 channel then it should be fine.

am using on my Turnigy 9X.

as far as I know the Turnigy 9X can't handle the fail safe: is that correct?

It would be a very best buy but I really need the fail safe feature for my esa and, even more

"flying cameras": how to solve?

Any advice?

Best regards, Marco

27th February 2014 - 3:09 pm

Hi, yes, that's correct, the 9X doesn't come with fail safe feature.
to have that feature, you will need to upgrade to a better TX module, e.g. FrSky TX module.
find out more about how to upgrade TX on 9X.
https://oscarliang.com/turnigy-9x-transmitter-modifications/

KEN

12th March 2014 - 1:55 am

One option is to use a flight controller with two way telemetry. That way yo trigger a RTL event if the RC transmitter or receiver fails.

gy 9XR from HobbyKing for under $60 US without a
It has open source firmware available and can be con
on your PC. You can buy a transmitter/receiver modul
nd several others to suit your frequency and distance r
those of us visiting Oscar at his Internet home here),
TX/RX module based on the Arduino that can be cust
rangeRX TX/RX on 430MHz, a FlySky TX/RX on 2.4G
vare together cost less than the JR XG8 we bought my
hobby store). The JR feels like a higher quality transm

all your efforts with this site.

OSCAR

12th March 2014 - 5:08 pm

Yes, very good point.
One thing everyone should be aware of is, what frequency bands signal power are allowed for personal use, before buying the equi
Although it's unlikely anyone would find out or even care, 's

Some times i envy people living in the states, many frequencies a
to public.

SUJITH

22nd January 2014 - 5:55 am

Sir,

Should the RC transmitters , motors and ESC's be of the same company.

JASVEER

29th October 2013 - 10:17 pm

itter/receiver but I just not sure where can i get it for a
le to fly my x quadcopter for at least 10 to 12 minutes a
el for the landing purpose. Can you suggest me a bette
ne. Best regards.

RC stuff at really low price. Another place to look for c

e expensive, for quadcopter, 4 to 6 channels would be
ng about long term investment, Turnigy 9X is a good c
channels, and lots of potential for modification).

DJ_GARFIELD

23rd December 2014 - 9:51 pm

Yep , Hobby King , right one : serious , listen to the customers , fast mailin

(HobbyGaGa for the price too and banggood is multipurpose so I can join Arduino orders with RC one)

I like :

“They are more expensive radios transmitter, but they do have nicer gimba maybe better resolution.”

If you search in Futaba , or something equal, yes it’s expensive and would try , on day , If the difference justify the price ~|:

=> Thought last month …

Today I can feel the difference between the HK-T6A-M1 , and Walkera DE and the ration Price / Quality is sensable (syntax ??) … (HK-T6A-M1 :20 Walkera DEVO12E :148.99€), ok we have 6 channels more , but the stick linearity … The sweetness of the stick . All the type of “pilot” Mode : 1,2,3,

serigraphy are for mode 2 , I fly in mode 3 :) Totaly rev

the beginning the HK is quiet what’s we must have … it’s another story :) (where are my pills ??)

ber 2014 - 9:43 am

field, yes most of the times we don’t have the chance t ucts, and many reviews on the internet isn’t always tru it’s good to meet people on the field, and try their gear

SUMAN HAZRA

14th November 2014 - 7:55 pm

Hi there, I need to purchase a transmitter/receiver but I just not sure where can i g a better or cheaper price. My goal is to be able to fly my x quadcopter for at least 1 minutes and we are also looking for one extra channel for the landing purp Ca

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